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ABSTRACT

The past and present economic and social problems and cause-effect relationships are major factors in the development of education at the community and junior college levels. Internal redesign of public junior colleges during the 1960's and early 1970's transformed them from liberal arts institutions into administratively flexible institutions offering a comprehensive array of services that stray considerably from the lock-step curricula of traditional educational institutions. The most astounding feature of the community college is that it evolved from catalytic forces in communities and not as a result of a community college act passed by Congress. Simultaneous with the emergence of the community college as an institution is the gaining impetus of vocational education and training, and community colleges and technical institutes have become the primary delivery vehicle for this type of education in most States. As we look at the developments of the past, we find the insights to serve as the basis to guide our speculation about the future. The third century without doubt will produce new demands on junior and community colleges. The cumulative effect of the demands will be that the researcher will be called upon to stray quite a bit from what is known as institutional research into what might be called community research. The extension of the community college out into the community serving new clients under new kinds of arrangements and performing new roles will require the research office to develop new skills and to take on new assignments. Continued success of junior and community colleges to a large degree will be contingent upon their capacity to respond to changing conditions and to demonstrate in measurable terms their effectiveness as community institutions and the validity of their programs and services. (WL)

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CENTURY THREE: IMPLICATIONS FOR COMMUNITY AND JUNIOR COLLEGE RESEARCH

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Introduction

As our nation enters its third century, prophecy is fashionable. The literature abounds with views on what the future has in store for us. Some prophets look for cause-effect type relationships and, when found, these relationships serve as the basis for statements about the future. Some predictions are based on man generated cyclical patterns, such as those related to the multiplier effect and acceleration principle which economists have perfected. Others have developed refined mathematical models to give the air of precisemess to their predictions. The study of historical trends in search of a basis for prediction has occupied many scholars. Some analyze the present and hypothesize about its impact on the future. Some prophets credit psychic phenomena. Others are influenced by theology. Certainly, the art of prophecy is ancient as is seen in the Bible and the writings of Confucious.

In this discussion, the past, present economic and social problems and cause-effect relationships will guide my comments. We will turn a little to history in an effort to look for trends and indications of the magnitude of change that might be reasonable to expect and the character of events that could be ahead of us. We will speculate about the consequences of some of the current issues and concerns in terms of implications for research priorities for community and junior colleges in the years ahead.

A Brief Look at the Past

During the last century, we saw the forces of change produce a range of discoveries affecting mankind and nations in ways that only a few people a century ago would have dared imagine. In the last 50 years, we have witnessed applications of knowledge producing nuclear power, computer technology, agricultural chemicals, control over birth, the polio vaccine, and television technology--all having profound impact on our way of life.

To appreciate the extent of change that can occur in a century, we should recall that a hundred years ago, we were developing one room schools within walking distance of home. As far as higher education went, we had a few liberal arts colleges, largely church supported, and a few land grant colleges with an agricultural emphasis.

Since then, education went through many changes. Although it is difficult to perform something as awesome as a nuclear reaction in the methodologies of teaching and learning, educators have made headway in this direction. We have developed competency based instruction, and we use behavioral objectives to guide our teaching. Auto-tutorial technology and computer assisted instruction have had success. Computerized guidance has been big enough for IBM to buy the program and to market it nationally. Educational television has made it possible for the home to be a learning center. Cooperative education gives students practical experiences in work settings and in volunteer service.

Perhaps the most significant development in higher education that is truely an American innovation is the comprehensive two-year associate degree granting community college. The public

junior colleges underwent internal redesign in the last 15 years. Many transformed themselves from liberal arts institutions into administratively flexible institutions offering a comprehensive array of services that stray considerably from the lock-step curricula of traditional educational institutions. The strong tie to community interests and heavy dependence in most cases on local financing requires them to be highly responsive to social, economic and political institutions and to assume leadership roles in strengthening community life.

The most astounding feature of the community college is that it evolved from catalytic forces in communities and not as a result of a community college act passed by Congress. The fact that community colleges have had to struggle to get a share of the Federal education pie has given them that energy and vitality that comes from growing up as a poor cousin.

The categorical set aside for community colleges has been an effective tool in the Federal grant arena, but the quest for parity--equality of access to Federal resources--continues. It should be noted how little Federal money is available for community college research.

Simultaneous with the emergence of the community college as an institution, a hybrid strain of education which had been evolving for decades, gained impetus and became as marketable as the Model T Ford was when it became known. Just as practical as the Ford answer to transportation, vocational education and training, or as post secondary students prefer to call it "occupational education," has become increasingly an attractive option in American education. For other than high school students,

community colleges and technical institutes became the primary delivery vehicle for this popular option in most states. Today, by conservative estimates, occupationally oriented education accounts for 50 to 60 percent of the almost four million persons enrolled in community colleges, junior colleges, and technical institutes. This percentage is increasing annually and may be expected to continue to grow in the next decade in view of the interest in occupational preparation generated by the career education movement.

As we look at the developments of the past, we find the insights to serve as the basis to guide our speculation about the future. It is apparent that many current trends will continue and it is certain that new far-reaching forces will affect education in the years ahead.

Without doubt, major demands will be placed on community and junior colleges in Century Three. On the basis of what we know at this point in time, among these demands will be:

1. Serve a broad array of people, broader than today and with more attention to specific needs.

2. Justify the basis for existence of the community college as a comprehensive, community-based insitution, including the efficacy of programs and services offered.

3. Develop new organizational arrangements for providing community benefit.

On the surface there appears to be nothing in these demands as challenging as: bring peace to the world, or eliminate starvation and disease, or develop the resources of the planets, or find new galaxies in the universe or find a substitute for

petroleum. But the demands placed on educational researchers will test whether the title is deserved.

Reaching New Clients

In looking at the first area--serving a broad array of people, the market for community college services is far from being fully developed. Currently, the average student age is about 35 in a number of community colleges. In looking ahead, one point that can be made with a high degree of confidence is that the community college market will continue to shift to older and older students and away from an identity with a given chronological age as the college age or with the recent high school graduate. In the process, the college will need to develop an early warning system that will permit an appropriate and timely response.

In the decade ahead, community colleges must give top priority to developing a better fix on the various populations constituting their prospective clients. We will have to be more sophisticated about the needs of the numerous categories of learning disabilities, gradations of economic deprivation, and impact of sociological considerations whether ethnic, sex, or age derived. The days of looking at the interests of 10th, 11th and 12th graders to determine what is expected to come out of the pipeline are disappearing. The structure of needs is much more complex. Almost one-fourth of the high school students do not complete high school. Therefore, an interface must be established with the conglomeration of adults in need of community college services such as the poorly educated adult, the unemployed college graduate, the technologically displaced

professional, and those forced out of productive roles by performance standards, retirement policies, and legislated requirements associated with environmental protection and occupational safety. The needs are varied and educational programs will necessarily take new form.

The entry-exit-reentry process will need to be studied and improved to facilitate the changing market. Emphasis must be placed on improving access to services by persons of post-secondary age. To improve the quality of educational services, instruction must become more and more individualized and packaged to fit the needs and availability of students and not the convenience of the faculty or the institution.

Credit for life experience will be a common practice in the not too distant future, in my opinion. Equivalency measures may be expected to become quite intricate to encompass the galaxy of external learning that goes on in the normal process of work, community service, and life generally.

Linkages with the place of work, in particular, better communication with personnel managers of corporations, with officials of labor unions, and with other principals in the labor market, will become more and more pronounced because of the growing expectation that education should be related to the world of work and that education should lead to a contributing role in the economic arena. The career education focus is more than a momentary fad. It is highly probable that the education work theme will accelerate in the years ahead. Through such linkages, the imperfections in forecasting demand in local labor markets will tend to be reduced,

the transition of persons from education to work will be enhanced, the retraining and upgrading of the workforce will be refined, and community resources will be more effectively utilized.

Justification of Comprehensive, Community Based Character

In the years ahead, community colleges will be under pressure to justify their existence as comprehensive, community-based institutions, including the efficacy of the programs and services offered. In the past decades, especially in the 1950's and 60's, educators had a free hand in the operation of their institutions. Uncontrolled expansion was the rule. Community colleges benefitted from this mood.

The future will require much more preciseness in measuring the need for and impact of comprehensive educational services than has been the case in the past. The public will want to know the benefit being derived. Cost benefit ratios will need to be refined. Chief executive officers must be prepared to justify the budget in terms of increments of outcome derived from increments of expenditure.

Community leaders will require us to be explicit about the impact of what we do on individuals, social problems, community vitality, and on the productivity of local employers and the economy generally. We will need to show the impact of our services on the student in terms of adequacy of preparation for a productive role in the community, ability to retain a job, and ability to advance.

In the past, it has been appropriate to talk of enrollments as the indicator of success in serving community needs. How often have you heard a president boast of an increase in enrollments without much information on the composition of that increase or other details? Only a few institutions maintain longitudinal data systems. Contrary to past practices, the future will require a president to discuss intelligently characteristics of those enrollments, retention of clients, what is happening to the students after they exit, and who returns for additional services, among other aspects of the clients being served. Such information in sufficient detail and properly analyzed is a fundamental tool in the budgetary process, in forward planning, and in answering questions of the board of trustees and local and national politicians and community interest groups, as well as in collective bargaining with teachers unions.

Although the associate degree is a key descriptor of community and junior colleges, only a few studies deal with the matter of its acceptance by employers as a measure of educational attainment, the earning power of associate degree graduates relative to baccalaureate degree graduates, and the convertibility of associate degree credits to other degrees. Unless such information is developed, the credibility of the associate degree will continue to be challenged. We need some longitudinal studies on these matters.

As we look at curriculum needs, the research director will have a strategic role to play in building the case for starting up new programs or redesigning existing ones. Many factors will affect our curricula.

Some of the factors that we must observe closely and interpret for the demands that they will represent include:

1. Sociological factors such as changes in the role of the family, growth of urban institutions, and increased mobility of persons will need to be assessed for training and education implications. From such developments, new occupations will emerge.

2. Population trends in our communities will have profound impact on decisions. Such dimensions of population trends as changes in the median age, life expectancy, birth rates, and in population density centers must be studied and interpreted.

3. Contemporary problems associated with waste disposal, contamination of the atmosphere and other environmentally based concerns may be expected to become aggravated. As regulatory agencies are created and expanded and as control measures are developed, technical and science education programs will necessarily require modification. Based on prior experience, it is not likely that a surge of new occupations will take place. Existing occupations will absorb many of the environmental control functions.

4. Major shifts may be expected to occur in our economy due to the growing awareness of energy shortages. The search for alternative sources of energy will activate dormant technologies and lead to new technologies, which will place demands on curricula that influence public opinion and develop technical personnel. For instance, energy-using technologies will be deemphasized and labor-using technologies will be emphasized. Labor-using techniques will return in selected industries, such as construction, not only conserving energy but also reducing the level of unemployment which plagues our nation today.

5. Extraordinary ventures will take place in the decades ahead, which educators must be prepared to assess for educational purposes. For instance, space discoveries may be expected to produce extensive explorations leading to resource extraction from other planets, interplanetary industrial development, and new technologies for economic activity in low gravity environments and other non-Earth environments. Further, deep penetration of the Earth and other planets for geological knowledge, expanded utilization of the oceans and the Earth's atmosphere will occupy scientists and will place technological demands on our industrial enterprises, which in turn will activate programmatic changes in our educational institutions.

6. National efforts will be intensified to reverse the decline in the productivity of our manufacturing, transportation, and distribution systems and in the delivery of professional services. As a result, we should expect to see new forms of interface of the consumer with outlets of services and goods. It should be noted that in the last half century the consumer became farther and farther away from the farmer, physicians quit making housecalls, and shopping centers with self-service shopping have developed. There is no reason to believe, in my opinion, that we will not see more changes in these systems hopefully increasing the productivity of the systems. Although professional organizations may be expected to resist use of paraprofessionals and technicians, and restructuring of the service delivery systems, there is evidence that archaic and costly approaches are breaking down.

7. Local governments will become increasingly diversified and tax payers will voice demands for efficiency in government. As a result, a revamped approach to civil service, public employment practices, and the training and retraining of personnel will be required. The dependence of local governments upon community colleges for a range of new services will continue to grow.

By no means is it suggested that the design of new curricula will necessarily be the educator's response to all of this. In fact, it may mean that revisions will be the answer with components added on and new options developed within existing programs. In other cases, the infusion of content may be all that would be necessary. In any case, the forces of change, as summarized above, must be tracked with precision by community college researchers.

As important as developing a data base for new curricula is developing a data base to guide phasing down or phasing out of present educational programs that produce low community benefit and in turn to guide the reallocation of faculty and resources to new uses. Education as a system has, in my opinion, lacked

adequate signaling mechanisms (management systems, if you wish) to maximize the use of resources without depriving services.

Researchers should monitor closely the following trends that will affect design of curricula:

1. the need to recycle technical skills on an accelerated basis due to the knowledge explosion and structural changes in the economy;

2. the synthesis of disciplines as is evidenced by the demands for bio-medical, psycho-engineering, and socio-architectural technologies;

3. the tendency to vertically stretch out the manpower hierarchy producing discrete gradations of specialization from the technical specialist to the professional generalist.

Researchers will be expected to have at their command data pertaining to these trends.

Additionally, there is a growing emphasis on job or task analysis as a basis for developing modules of instruction in curricula. Research offices in community colleges should be knowledgeable about these methodologies. The future will not permit us to build or revise curricula on the basis of subjective judgments of the content of a curriculum.

Structural Changes Are Imminent

With emphasis on increasing the community benefit derived from community colleges, the structure of community colleges may be expected to change and new organizational forms for mobilizing resources and delivering that benefit will most likely emerge in the future. These developments will come about through the formation of new alliances. Already we find consortia

arrangements combining the capabilities of governmental agencies, neighboring educational institutions, volunteer organizations, and proprietary interests with those of the community college. Contractural arrangements are being developed with these entities to address community needs with collective strength. Arrangements with neighboring educational institutions are becoming common practices to serve unserved needs, reduce possibilities of duplication, enhance articulation, and avoid the need for construction of new facilities.

Today, we can find new community college districts that plan to have no faculty and no campuses but are contracting with several existing institutions (public, proprietary, liberal arts, non-profit, vocational) to provide students with a comprehensive array of services. Teachers would be employed only if services were not available from existing institutions. In my opinion, these arrangements will grow. Major problems associated with control of curriculum, the rate at which services should be purchased, legal complexities, and evaluation will require new staffing patterns and will undoubtedly give new responsibilities to the researcher.

Local master plans, in the future, will place more and more emphasis on the utilization of the resources of business and industry and community agencies as cost-saving and quality-improvement measures. Rather than duplicate resources in the community, colleges will expand the practice of leasing production facilities for instructional use during off hours and purchasing the time of technically competent supervisory

personnel for services rendered in teaching students refined competencies at the work site. Such arrangements will become an integral part of the plans of community college districts. Community agencies will increasingly serve as learning stations through which students provide services while receiving training. Someone in each college will need to design a construct that will synchronize the use of existing college resources with the resources of the work site, to provide data needed to determine reasonable rates of compensation for these services, and to work out the intricacies of administrative control. These new arrangements will be with manufacturing firms, financial institutions, labor unions, private social service agencies, and governmental agencies, among others, going beyond apprenticeship training and traditional cooperative education arrangements.

As a result of these developments, work and community service will become inseparable from education. A new liberal arts will emerge, much less esoteric than the classical liberal arts. Education will be structured into the total life cycle with educational services for older people, regardless of age, being as pertinent as for younger people, losing the reputation of being a stopping off place for people who cannot be absorbed by society.

In another direction, more and more community colleges will be engaged in providing specialized training under performance contracts. Process evaluation will become more intricate. Cost schedules will need to be developed to enable the institution to recover its direct and indirect costs. It is amazing how deficient some institutions are in this regard. Recently, a

rather large community college reportedly did not know what its overhead rate was and therefore was not including this item in local performance contracts.

Moving on, we should not overlook the fact that a growing segment of our society views the educational system as being in serious difficulty and thereby constituting one of our national problems no less in need of attention as the energy crisis or the environmental dilema. Will the delivery of formal educational services remain a virtural monopoly of public and non-profit private educational institutions? Or will education be turned over to proprietary interests guided by economic principles of the market place such as are found in supply-demand analysis, price theory, and input-output theory. We are likely, in my opinion, to see proprietary interests and/or their concepts entering the picture increasingly in the decades ahead. Institutional research is already being turned over to external or third party organizations by some cost conscious presidents.

In turning to another thought, may I suggest that the community college is not likely to be a static concept retaining its present dimensions very long. Because of its success in assembling resources and in responding to community needs, community leaders will turn to it frequently. As a result, community college dimensions will be broadened to the extent that the community college will become a community resource agency. In this capacity, education and training will continue to be important functions, but community planning and development, industrial revitalization,

and human and social services, among other professional and technical functions will be synthesized into the mission of the community college. This phenomenon will be persistent particularly in suburban and rural communities where the functions are poorly performed or go unperformed. The trend will be most pronounced in those cases where the community college is locally financed, locally controlled, responsive to community problems, and the training and education programs are service-centered, as described above. Community colleges that will be unwilling, unprepared, or incapable to respond will lose their favored positions in their communities.

Summary

The third century without doubt will produce new demands on community colleges. The cumulative effect of the demands will be that the researcher will be called upon to stray quite a bit from what is known as institutional research into what might be called community research. The extension of the community college out into the community serving new clients under new kinds of arrangements and performing new roles will require the research office to develop new skills and to take on new assignments. Continued success of community colleges to a large degree will be contingent upon their capacity to respond to changing conditions and to demonstrate in measurable terms their effectiveness as community institutions and the validity of their programs and services.

To emphasize the magnitude of change that will face education in the next one hundred years, let me share a final thought.

Given our communication and engineering technologies, I would expect in the decades ahead that learning will be refined to such a degree that we may find learning technology teamed up with engineering technology to create a learning chamber eliminating the traditional classroom approach. Learning would be circuitized to such a degree that upon signal the learning chamber would dump into the mind all the knowledge, strategies, and competencies needed for a given situation in a work setting or other environment.

Will Century Three give us this type of a learning chamber? The technological capability appears to be there, and I frankly anticipate that something as dramatic in character as a learning chamber will be developed by a national educational research laboratory in a decade or two.

Perhaps, the concept of a learning chamber may be unrealistic, and totally undesirable, but I am convinced that learning technology will be modified significantly in the future and that the role of community colleges and educators will change drastically. The community college researcher will continue to be among those persons shaping that future, in my opinion.

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